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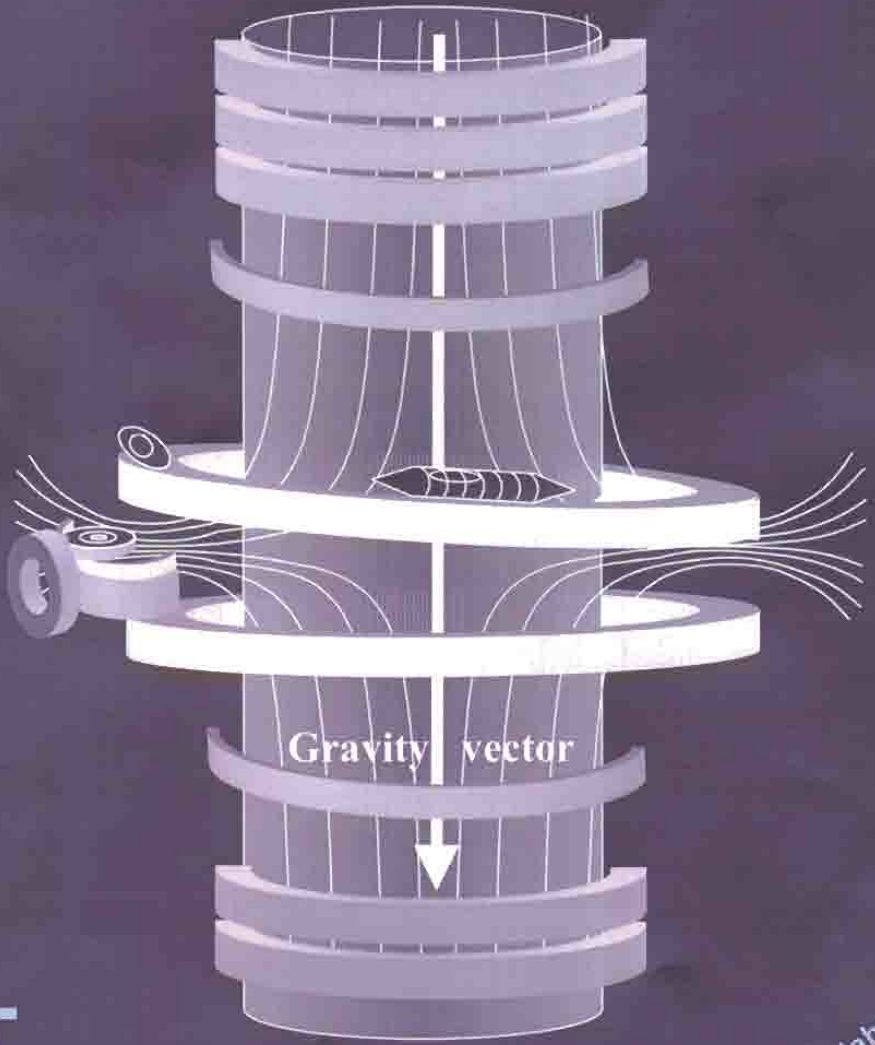

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U.S. Department of Commerce—**Carlos M. Gutierrez,** Secretary
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National Institute of Standards and Technology—**Hratch G. Semerjian,** Acting Director

Cover: A superconducting solenoid (gray) generates magnetic flux lines that are focused around the center, where one of the induction coils (white) can act as a motor or a generator. When the electromagnetic and gravitational forces are aligned, an absolute power measaurement of watt units determines the Planck constant. Cover art arranged by C. Carey.

The *Journal of Research of the National Institute of Standards and Technology*, the flagship periodic publication of the national metrology institute of the United States, features advances in metrology and related fields of physical science, engineering, applied mathematics, statistics, biotechnology, and information technology that reflect the scientific and technical programs of the Institute. The *Journal* publishes papers on instrumentation for making accurate measurements, mathematical models of physical phenomena, including computational models, critical data, calibration techniques, well-characterized reference materials, and quality assurance programs that report the results of current NIST work in these areas. Occasionally, a Special Issue of the *Journal* is devoted to papers on a single topic. Also appearing on occasion are review articles and reports on conferences and workshops sponsored in whole or in part by NIST.

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Articles